**UNITED STATES DISTRICT COURT**
**FOR THE DISTRICT OF MASSACHUSETTS**

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| iROBOT CORPORATION,<br><br>Plaintiff<br><br>v.<br><br>HOOVER, INC.;<br><br>ROYAL APPLIANCE MANUFACTURING CO. INC. D/B/A TTI FLOOR CARE NORTH AMERICA, INC.;<br><br>SHENZHEN SILVER STAR INTELLIGENT TECHNOLOGY CO., LTD.; and<br><br>SUZHOU REAL POWER ELECTRIC APPLIANCE CO., LTD.,<br><br>Defendants. | Civil Action No. 1:17-cv-10647<br><br>**JURY TRIAL DEMANDED** |

## COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff iRobot Corporation ("iRobot"), by and through its attorneys, brings this complaint for patent infringement and demand for jury trial against Hoover Inc. and Royal Appliance Manufacturing Co. Inc. *d/b/*a TTI Floor Care North America, Inc. (collectively, "Hoover"), Shenzhen Silver Star Intelligent Technology Co., Ltd. ("SSSIT"), and Suzhou Real Power Electric Appliance Co., Ltd. ("Real Power") (collectively, the "Defendants") and alleges as follows:

## NATURE OF THE ACTION

1. This action for patent infringement arises under the laws of the United States, Title 35 of the United States Code, 35 U.S.C. § 1 *et seq.*

## PARTIES

2. Plaintiff iRobot Corporation is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 8 Crosby Drive, Bedford, Massachusetts 01730.

3. On information and belief, Hoover Inc. is a corporation organized under the laws of the State of Delaware, having a principal place of business located at 7005 Cochran Road, Glenwillow, Ohio 44139.

4. On information and belief, Royal Appliance Mfg. Co. Inc. is a corporation organized under the laws of the State of Ohio, having a principal place of business located at 7005 Cochran Road, Glenwillow, Ohio 44139. On information and belief, Royal Appliance Mfg. Co. Inc. is a subsidiary of Techtronic Industries Company Limited that does business under the name TTI Floor Care North America, Inc. On information and belief, the website at which the Hoover Quest line of products is available for sale, states "Today, Hoover is part of TTI Floor Care North America, headquartered in Glenwillow, OH."[1] Moreover, the TTI Floorcare North America website has a link to the Hoover sales website and also states "Hoover: We acquired this marquee brand in 2007."[2]

5. On information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. is a Chinese corporation, having a principal place of business located at Building D, Huiqing Technology Park, DAFU Industrial Area, Guanguang Road, Guanlan Town, Shenzhen, People's Republic of China.

[1] *See* https://hoover.com/about/ (last visited April 13, 2017).
[2] *See* http://ttifloorcare.com/company/ (last visited April 13, 2017).

6. On information and belief, Suzhou Real Power Electric Appliance Co., Ltd. is a Chinese corporation, having a principal place of business located at No 9 Shi Yang Rd, Suzhou New District, Suzhou 215151, People's Republic of China.

## JURISDICTION AND VENUE

7. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. This Court has personal jurisdiction over Hoover because, *inter alia*, upon information and belief, Hoover has purposefully availed itself of the privileges of conducting business in this judicial district and has regularly and systematically transacted business in this district, directly or through intermediaries; Hoover has committed acts of patent infringement in this district; and Hoover has substantial and continuous contacts within this judicial district, at least due to soliciting customers from this judicial district via its own website, Hoover.com, as well as through third-party websites and/or sales via retail and wholesale stores in Massachusetts. Moreover, upon information and belief, Hoover has purposefully shipped its products into this district through established distribution channels and has placed its products into the stream of commerce with the knowledge and expectation that they will be purchased by consumers in this district.

9. This Court has personal jurisdiction over SSSIT because, *inter alia*, upon information and belief, SSSIT manufactures and/or imports infringing devices that are marketed and sold to Massachusetts consumers through a nationwide channel of distribution in the United States. Moreover, upon information and belief, SSSIT has purposefully and voluntarily placed infringing devices in the stream of commerce with the knowledge and expectation that the same will end up in, and be marketed, sold, and purchased in, Massachusetts. Upon information and

belief, SSSIT has entered into a business relationship with Hoover whereby SSSIT manufactures infringing devices and imports them into the United States so that Hoover can sell these infringing devices throughout the United States, including in Massachusetts.

10. This Court has personal jurisdiction over Real Power because, *inter alia*, upon information and belief, Real Power manufactures and/or imports spare parts used in infringing devices that are marketed and sold to Massachusetts consumers through a nationwide channel of distribution in the United States. Moreover, upon information and belief, Real Power has purposefully and voluntarily placed spare parts for use in infringing devices in the stream of commerce with the knowledge and expectation that the same will end up in, and be marketed, sold, and purchased in, Massachusetts. Upon information and belief, Real Power has entered into a business relationship with Hoover whereby Real Power manufactures spare parts used in infringing devices and imports them into the United States so that Hoover can sell these parts throughout the United States, including in Massachusetts.

11. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b).

**SINGLE ACTION**

12. This suit is commenced against Defendants pursuant to 35 U.S.C. § 299 because, *inter alia*, upon information and belief, SSSIT and Real Power manufacture and/or import infringing robotic vacuums, and spare parts for the same, for and on behalf of Hoover, who offers them for sale in the United States, and sells them in the United States, including in Massachusetts. Defendants are therefore part of the same manufacturing and distribution chain and share accused product lines and products involving iRobot's patented technologies.

13. Accordingly, Hoover and SSSIT are jointly and severally liable for patent infringement relating to the infringing robotic vacuums made, used, imported, offered for sale, sold, and/or used in the United States by either or both of them, and Hoover and Real Power are jointly and severally liable for patent infringement relating to the spare parts used in infringing robotic vacuums made, used, imported, offered for sale, sold, and/or used in the United States by either or both of them. iRobot's right to relief against each of these Defendants arises out of the same transaction, occurrence, or series of transactions or occurrences relating to the making, using, importing into the United States, offering for sale, and/or selling of the same accused robotic vacuums and spare parts thereof. Questions of fact common to these Defendants will arise in this action, including as to whether the accused products infringe the asserted patents. Thus, joinder of the Defendants is proper under 35 U.S.C. § 299.

## THE PATENTS-IN-SUIT

### The '308 Patent

14. On December 26, 2006, United States Patent No. 7,155,308 ("the '308 Patent"), entitled "Robot Obstacle Detection System," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 10/453,202, filed on June 3, 2003. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '308 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

15. The '308 Patent relates to a robot obstacle detection system that includes a robot housing that navigates with respect to a surface, and a sensor subsystem. The sensor subsystem includes an optical emitter which emits a directed beam having a defined field of emission and a photon detector having a defined field of view which intersects the field of emission of the emitter

at a region. A circuit in communication with a detector redirects the robot when the surface does not occupy the region to avoid obstacles. A similar system is employed to detect walls.

**The ’233 Patent**

16. On May 26, 2015, United States Patent No. 9,038,233 (“the ’233 Patent”), entitled “Autonomous Floor-Cleaning Robot,” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 13/714,546, filed on December 14, 2012. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the ’233 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

17. The ’233 Patent relates to an autonomous floor-cleaning robot that includes a cleaning head subsystem with a dual-stage brush assembly having counter-rotating, asymmetric brushes. The autonomous floor-cleaning robot further includes a side brush assembly for directing particulates outside the envelope of the robot into the cleaning head subsystem.

**The ’090 Patent**

18. On July 2, 2013, United States Patent No.8,474,090 (“the ’090 Patent”), entitled “Autonomous Floor-Cleaning Robot,” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 12/201,554, filed on August 29, 2008. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the ’090 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

19. The ’090 Patent relates to a floor cleaning robot that includes a housing, wheels, and a motor driving the wheels to move the robot across a floor, a control module disposed within the housing and directing movement of the robot across the floor, a sensor for detecting and

communicating obstacle information to the control module so that the control module can cause the robot to react to the obstacle, a removable bin disposed at least partially within the housing and receiving particulates, a first rotating member directing particulates toward the bin, and a second rotating member cooperating with the first rotating member to direct particulates toward the bin.

**The ’553 Patent**

20. On December 3, 2013, United States Patent No. 8,600,553 (“the ’553 Patent”), entitled “Coverage Robot Mobility,” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 11/758,289, filed on June 5, 2007. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the ’553 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

21. The ’553 Patent relates to an autonomous coverage robot that includes a drive system, a bump sensor, and a proximity sensor. The drive system is configured to maneuver the robot according to a heading and a speed setting. The bump sensor is responsive to a collision of the robot with an obstacle in a forward direction. A method of navigating an autonomous coverage robot with respect to an object on a floor includes the robot autonomously traversing the floor in a cleaning mode at a full cleaning speed. Upon sensing a proximity of the object forward of the robot, the robot reduces the cleaning speed to a reduced cleaning speed while continuing towards the object until the robot detects a contact with the object. Upon sensing contact with the object, the robot turns with respect to the object and cleans next to the object.

**The ’490 Patent**

22. On October 26, 2004, United States Patent No. 6,809,490 (“the ’490 Patent”), entitled “Method and System for Multi-Mode Coverage for an Autonomous Robot,” was duly and

legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 10/167,851, filed on June 12, 2002. iRobot is the owner, by valid assignment, of the entire right, title, and interest in and to the '490 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

23. The '490 Patent relates to a control system for a mobile robot to effectively cover a given area by operating in a plurality of modes. In an exemplary embodiment, an autonomous mobile robot can operate in an obstacle following mode, a random bounce mode, or in a spot coverage mode. Additionally, the '490 Patent describes a behavior based architecture for the control system to ensure full coverage.

**The '924 Patent**

24. On November 8, 2016, United States Patent No. 9,486,924 ("the '924 Patent"), entitled "Remote Control Scheduler and Method for Autonomous Robotic Device," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 14/670,572, filed on March 27, 2015. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '924 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

25. The '924 Patent relates to a method of scheduling a robotic device that enables the device to run autonomously based on previously loaded scheduling information. The method consists of a communication device, such as a hand-held remote device, that can directly control the robotic device, or load scheduling information into the robotic device such that it will carry out a defined task at the desired time without the need for further external control. The communication device can also be configured to load a scheduling application program into an existing robotic device, such that the robotic device can receive and implement scheduling information from a user.

## BACKGROUND

26. iRobot (formerly IS Robotics, Inc.) was founded in 1990 by Massachusetts Institute of Technology roboticists with the vision of making practical robots a reality. The company has developed some of the world's most important robots, and has a rich history steeped in innovation.

27. iRobot is the leader in home robotic cleaning devices, with products delivering convenient, customized, powerful cleaning assistance. Among other product offerings, iRobot develops, manufactures, and sells the well-known Roomba® line of products, which have been recognized as a market leader in robotic vacuum cleaning as well as highly preferred Braava® branded products.

28. iRobot has extensive involvement in the U.S. market, including the Massachusetts market, with its innovative robotic vacuum cleaning devices. iRobot employs hundreds of persons in the United States who are dedicated to the design, research, development, testing, quality control, and customer care of its robotic vacuum cleaning devices, and related accessories for U.S. customers.

29. Defendants compete directly with iRobot.

30. On information and belief, SSSIT manufactures robotic vacuum cleaning devices for Hoover, including, but not limited to, Hoover's Quest 700 (Model BH70700), Quest 800 (Model BH70800), and Quest 1000 (Model BH71000) robotic vacuums,[3] which, as explained below, infringe one or more claims of each of iRobot's '308 Patent, '233 Patent, '090 Patent, '553 Patent, '490 Patent, and '924 Patent (the "Asserted Patents").

31. On information and belief, Real Power manufactures spare parts for Hoover robotic vacuum cleaning devices such as the Quest 700 (Model BH70700), Quest 800 (Model BH70800),

[3] These exemplary infringing products are hereinafter referred to as the "Accused Products."

and Quest 1000 (Model BH71000) robotic vacuums, which, as explained below, infringe one or more claims of the Asserted Patents.

32. To the extent facts learned in discovery show that one or more Defendants' infringement of a claim of an Asserted Patent is or has been willful, including following the filing of this Complaint, iRobot reserves the right to request such a finding at the time of trial, or as may otherwise be allowed by the Court.

**COUNT I: INFRINGEMENT OF THE '308 PATENT BY HOOVER**

33. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 32 of this Complaint as though fully set forth herein.

34. Upon information and belief, Hoover has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '308 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

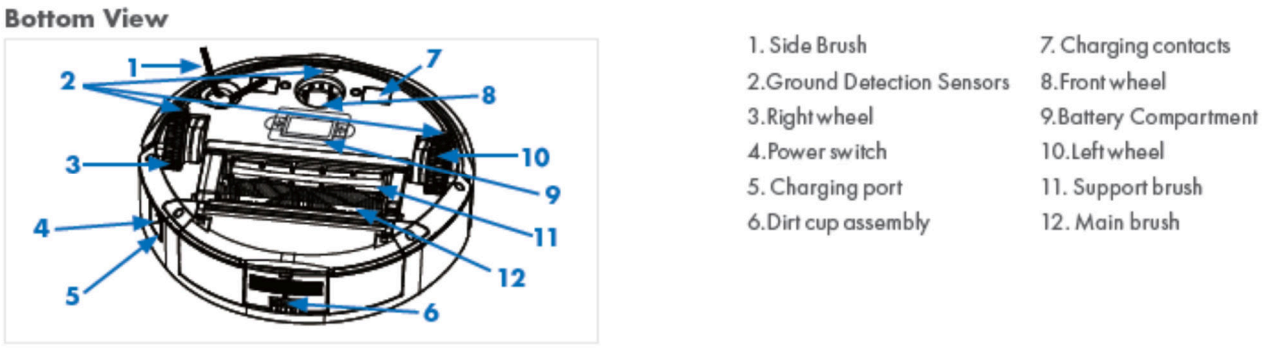
35. For example, on information and belief, Hoover's Quest 1000 robotic vacuum, used by Hoover and/or sold and offered for sale by Hoover, including at its website, infringes claim 1 of the '308 Patent; this claim recites:

> A sensor subsystem for an autonomous robot which rides on a surface, the sensor subsystem comprising: an optical emitter which emits a directed optical beam having a defined field of emission; a photon detector having a defined field of view which intersects the field of emission of the emitter at a region; and a circuit in communication with the detector providing an output when an object is not present in the region thereby re-directing the autonomous robot.

36. On information and belief, Hoover's Quest 1000 robotic vacuum is an autonomous robot that rides on a surface such as a floor.[4] It includes sensor subsystems that comprise at least

[4] *See, e.g.*, Quest 1000 Product Web Page, " Hoover Quest 1000 Robot Vacuum - BH71000 video" https://hoover.com/products/details/bh71000/hoover-quest-1000-robot-vacuum/,

an optical emitter that emits an optical beam with a defined field of emission and a photon detector whose field of view intersects with this field of emission. On information and belief, the sensor subsystem also includes a circuit in communication with the detector that provides a signal when an object (such as the floor) is not present in this region of intersection such that the robot is re-directed. This behavior is referred to on the Hoover website's product page for the Quest 1000 robotic vacuum, which indicates that the Quest 1000 features "Cliff Sensor – detects stairs and drop-offs to avoid falling."[5] Indeed, the "ground detection" sensor subsystem components are depicted in the image of the Quest 1000 robotic vacuum below, labelled as component 2:[6]




37. Furthermore, upon information and belief, Hoover has induced and continues to induce infringement of at least claim 1 of the '308 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the Quest 1000.

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redirecting to https://youtu.be/G90oOjQGazA?list=PLJT0HzQNNNT9m47tF7YmYot0D1ZQU9ZfL (last visited April 13, 2017). Hereinafter, the "Quest 1000 Overview Video."

[5] Quest 1000 Product Web Page, https://hoover.com/products/details/bh71000/hoover-quest-1000-robot-vacuum/ (last visited April 13, 2017). Hereinafter, the "Quest 1000 Product Web Page."

[6] *See, e.g.*, Quest 1000 Instruction Manual provided with the product.

38. Upon information and belief, Hoover's customers and/or end users have directly infringed and are directly infringing claim 1 of the '308 Patent. Hoover has actual knowledge of the '308 Patent at least as of service of this Complaint. Hoover is knowingly inducing its customers and/or end users to directly infringe the '308 Patent through, for example, their use of the Quest 1000, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Hoover's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '308 Patent.[7]

39. Upon information and belief, Hoover has committed the foregoing infringing activities without license from iRobot.

40. As a result of Hoover's infringement of the '308 Patent iRobot has suffered and will continue to suffer damage.

41. Hoover's continued infringement of iRobot's patent rights under the '308 Patent will irreparably harm iRobot.

42. The acts of infringement by Hoover will continue unless enjoined by this Court.

**COUNT II: INFRINGEMENT OF THE '308 PATENT BY SSSIT**

43. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 42 of this Complaint as though fully set forth herein.

44. Upon information and belief, SSSIT has directly infringed, and continues to directly infringe, the '308 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Hoover, including, for example, the Quest 1000. These Accused

[7] *See, e.g.*, Quest 1000 Product Web Page and linked resources; *see also* Quest 1000 Instruction Manual.

Products infringe at least claim 1 of the ’308 Patent as explained above in paragraphs 34 – 36 with respect to Hoover’s direct infringement, which are incorporated herein by reference.

45. Upon information and belief, SSSIT has committed the foregoing infringing activities without license from iRobot.

46. As a result of SSSIT’s infringement of the ’308 Patent iRobot has suffered and will continue to suffer damage.

47. SSSIT’s continued infringement of iRobot’s patent rights under the ’308 Patent will irreparably harm iRobot.

48. The acts of infringement by SSSIT will continue unless enjoined by this Court.

**COUNT III: INFRINGEMENT OF THE ’308 PATENT BY REAL POWER**

49. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 48 of this Complaint as though fully set forth herein.

50. Upon information and belief, Real Power contributes to the infringement of at least claim 1 of the ’308 Patent by others, including its customers, distributors, and/or authorized resellers, and/or Hoover’s customers of the Accused Products, in violation of 35 U.S.C. § 271(c). Upon information and belief, acts by Real Power that contribute to the infringement of others include, but are not limited to, the sale, offer for sale, and/or import by Real Power of spare parts used in the Accused Products, such as the Quest 1000. Such spare parts for the Accused Products, on information and belief, are especially made for or adapted for use to infringe, and are not staple articles of commerce and are not suitable for substantial non-infringing use. By way of example, the non-standardized design of robotic vacuum cleaning devices is evidence that Real Power spare parts for the accused Hoover products were especially made or adapted to infringe the ’308 Patent. On information and belief, spare parts for the accused Hoover products are not suitable for use in competing robotic vacuum cleaners because, for example, the former would not properly fit the

latter. As such, on information and belief, spare parts for the accused Hoover products cannot be used but with the Accused Products to infringe the ’308 Patent. These Accused Products infringe at least claim 1 of the ’308 Patent as explained above in paragraphs 34 – 36 with respect to Hoover’s direct infringement, which are incorporated herein by reference.

51. Upon information and belief, Real Power has committed the foregoing infringing activities without license from iRobot.

52. As a result of Real Power’s infringement of the ’308 Patent iRobot has suffered and will continue to suffer damage.

53. Real Power’s continued infringement of iRobot’s patent rights under the ’308 Patent will irreparably harm iRobot.

54. The acts of infringement by Real Power will continue unless enjoined by this Court.

**COUNT IV: INFRINGEMENT OF THE ’233 PATENT BY HOOVER**

55. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 54 of this Complaint as though fully set forth herein.

56. Upon information and belief, Hoover has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the ’233 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

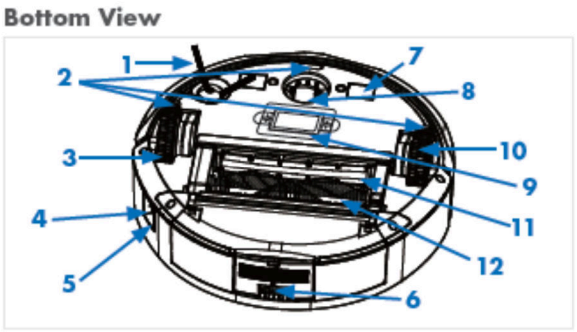
57. For example, on information and belief, Hoover’s Quest 1000 robotic vacuum, used by Hoover and/or sold and offered for sale by Hoover, including at its website, infringes claim 1 of the ’233 Patent; this claim recites:

> A self-propelled floor-cleaning robot comprising a housing defining a housing perimeter; a powered primary brush assembly disposed within the housing perimeter and positioned to engage a floor surface, the primary brush assembly being configured to rotate about an axis generally parallel to the floor surface; a cliff detector carried by the housing and configured to direct a beam toward the

> floor surface and to respond to a falling edge of the floor surface; and a powered side brush extending beyond the housing perimeter and positioned to brush floor surface debris from beyond the housing perimeter, the side brush being configured to rotate about an axis generally perpendicular to the floor surface and to rotate in a direction to direct debris toward the robot along a projected direction of movement of the powered primary brush assembly, the side brush having bundles of bristles and being positioned such that the bundles of bristles pass between the cliff detector and the floor surface during a rotation of the side brush around the axis, the bundles of bristles being separated by a gap, the gap being configured to prevent occlusion of the cliff detector beam during at least part of the rotation of the side brush around the axis; a particulate receptacle positioned to receive and collect particulates brushed from the floor surface by the primary brush assembly and the powered side brush; an obstacle detector responsive to obstacles encountered by the robot; and a control circuit in electrical communication with a motor drive and configured to control the motor drive to maneuver the robot about detected obstacles across the floor surface during a floor-cleaning operation.

58. On information and belief, the Hoover Quest 1000 robotic vacuum is a self-propelled floor-cleaning robot comprising a housing which defines a housing perimeter. On information and belief, it includes a powered primary brush assembly within this housing in a position such that it engages a floor surface, and the brush is configured to rotate about an axis that is generally parallel to the floor. On information and belief, it also includes a cliff detector which emits a beam toward the floor surface in order to respond to a falling edge of the floor surface. On information and belief, it also includes a side brush which extends beyond the housing perimeter, which rotates about an axis generally perpendicular to the floor surface to direct debris toward the robot along a projected direction of movement of the powered primary brush assembly. The aforementioned primary brush, cliff detector, and side brush are all visible in the image of a Hoover Quest 1000 robotic vacuum below, labelled as components 11/12, 2, and 1, respectively:[8]

[8] *See, e.g.*, Quest 1000 Instruction Manual.




1. Side Brush
2. Ground Detection Sensors
3. Right wheel
4. Power switch
5. Charging port
6. Dirt cup assembly
7. Charging contacts
8. Front wheel
9. Battery Compartment
10. Left wheel
11. Support brush
12. Main brush

59. As can be seen in the image below,[9] the side brush (1) has bundles of bristles. On information and belief, these bundles of bristles are positioned such that the bundles pass between the cliff detector (2) and floor surface during rotation, and the bundles are separated by a gap configured to prevent occlusion of the cliff detector beam.[10]


60. On information and belief, the Hoover Quest 1000 also includes a particulate receptacle that is positioned to receive the particulates brushed from the floor surface by the

[9] *Id.*
[10] *See also* Quest 1000 Product Web Page, " Hoover Quest 1000 – Clean Sensors - BH71000 video", redirecting to https://youtu.be/mAyL-LBzkJQ?list=PLJT0HzQNNNT9m47tF7YmYot0D1ZQU9ZfL (last visited April 13, 2017). Hereinafter, the "Quest 1000 Clean Sensors Video."

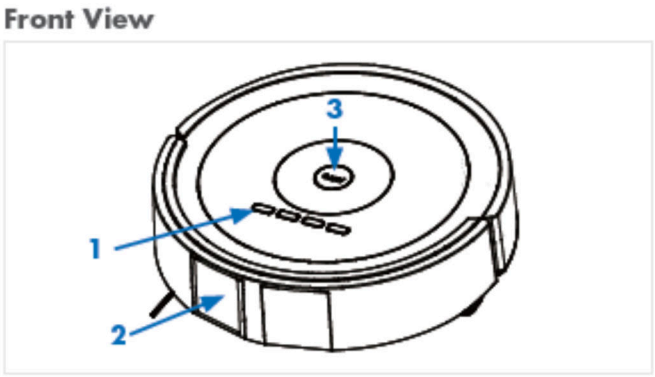
aforementioned brushes, as shown in the following images from the Quest 1000 Instruction Manual (upper image) and Quest 1000 Product Web Page (lower image):[11]



61. On information and belief, the Hoover Quest 1000 also includes an obstacle detector which is responsive to obstacles encountered, and a control circuit in electrical

[11] *See also* Quest 1000 Product Web Page, "Hoover Quest 1000 – Empty Dirt Cup - BH71000 Video", redirecting to https://youtu.be/7-eFh69uRMo?list=PLJT0HzQNNNT9m47tF7YmYot0D1ZQU9ZfL (last visited April 13, 2017). Hereinafter, the "Quest 1000 Dirt Cup Video."

communication with a motor drive configured to maneuver the robot about detected obstacles during a floor-cleaning operation.[12] An example of such an obstacle detector is evident in the image from the Hoover Quest 1000 Instruction Manual, labelled as component 2. Additionally, the Quest 1000 Product Web Page explains that the robot's "QuestNav 3.0™ Technology provides laser mapping, which enables the Quest 1000 to intelligently navigate your home for the most efficient clean."




62. Upon information and belief, Hoover has induced and continues to induce infringement of at least claim 1 of the '233 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the Quest 1000.

63. Upon information and belief, Hoover's customers and/or end users have directly infringed and are directly infringing claim 1 of the '233 Patent. Hoover has actual knowledge of the '233 Patent at least as of service of this Complaint. Hoover is knowingly inducing its customers and/or end users to directly infringe the '233 Patent through, for example, their use of the Quest 1000, with the specific intent to encourage such infringement, and knowing that the induced acts

[12] *See, e.g.*, Quest 1000 Overview Video.

constitute patent infringement. Hoover's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '233 Patent.[13]

64. Upon information and belief, Hoover has committed the foregoing infringing activities without license from iRobot.

65. As a result of Hoover's infringement of the '233 Patent iRobot has suffered and will continue to suffer damage.

66. Hoover's continued infringement of iRobot's patent rights under the '233 Patent will irreparably harm iRobot.

67. The acts of infringement by Hoover will continue unless enjoined by this Court.

**COUNT V: INFRINGEMENT OF THE '233 PATENT BY SSSIT**

68. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 67 of this Complaint as though fully set forth herein.

69. Upon information and belief, SSSIT has directly infringed, and continues to directly infringe, the '233 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Hoover, including, for example, the Quest 1000. These Accused Products infringe at least claim 1 of the '233 Patent as explained above in paragraphs 56 – 61 with respect to Hoover's infringement, which are incorporated herein by reference.

70. Upon information and belief, SSSIT has committed the foregoing infringing activities without license from iRobot.

71. As a result of SSSIT's infringement of the '233 Patent iRobot has suffered and will continue to suffer damage.

[13] *See, e.g.*, Quest 1000 Product Web Page and linked resources; Quest 1000 Instruction Manual.

72. SSSIT's continued infringement of iRobot's patent rights under the '233 Patent will irreparably harm iRobot.

73. The acts of infringement by SSSIT will continue unless enjoined by this Court.

**COUNT VI: INFRINGEMENT OF THE '233 PATENT BY REAL POWER**

74. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 73 of this Complaint as though fully set forth herein.

75. Upon information and belief, Real Power contributes to the infringement of at least claim 1 of the '233 Patent by others, including its customers, distributors, and/or authorized resellers, and/or Hoover's customers of the Accused Products, in violation of 35 U.S.C. § 271(c). Upon information and belief, acts by Real Power that contribute to the infringement of others include, but are not limited to, the sale, offer for sale, and/or import by Real Power of spare parts used in the Accused Products, such as the Quest 1000. Such spare parts for the Accused Products, on information and belief, are especially made for or adapted for use to infringe, and are not staple articles of commerce and are not suitable for substantial non-infringing use. By way of example, the non-standardized design of robotic vacuum cleaning devices is evidence that Real Power spare parts for the accused Hoover products were especially made or adapted to infringe the '233 Patent. On information and belief, spare parts for the accused Hoover products are not suitable for use in competing robotic vacuum cleaners because, for example, the former would not properly fit the latter. As such, on information and belief, spare parts for the accused Hoover products cannot be used but with the Accused Products to infringe the '233 Patent. These Accused Products infringe at least claim 1 of the '233 Patent as explained above in paragraphs 56 – 61 with respect to Hoover's direct infringement, which are incorporated herein by reference.

76. Upon information and belief, Real Power has committed the foregoing infringing activities without license from iRobot.

77. As a result of Real Power's infringement of the '233 Patent iRobot has suffered and will continue to suffer damage.

78. Real Power's continued infringement of iRobot's patent rights under the '233 Patent will irreparably harm iRobot.

79. The acts of infringement by Real Power will continue unless enjoined by this Court.

**COUNT VII: INFRINGEMENT OF THE '090 PATENT BY HOOVER**

80. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 79 of this Complaint as though fully set forth herein.

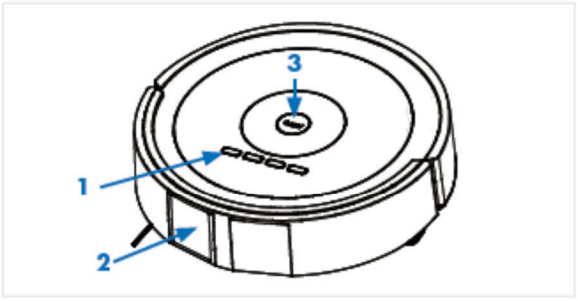
81. Upon information and belief, Hoover has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '090 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

82. For example, on information and belief, Hoover's Quest 1000 robotic vacuum, used by Hoover and/or sold and offered for sale by Hoover at its website, infringes claim 1 of the '090 Patent; this claim recites:

> A floor cleaning robot comprising: a housing and a chassis; wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor, each of the wheels being attached to the chassis via a respective arm having a distal end and a proximal end; a control module disposed within the housing and directing movement of the floor cleaning robot across the floor; at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle; a removable bin disposed at least partially within the housing and configured to receive particulates; and a first rotating member configured to direct particulates toward the bin, wherein one of the wheels is rotatably attached to the distal end of each arm, and the proximal end of each arm is pivotably attached to the chassis, wherein each wheel is biased to an extended position away from the robot chassis by a spring extending between the arm and the robot chassis, and wherein, during cleaning, the weight of the floor cleaning robot overcomes a force from the spring biasing the wheels to an extended position.

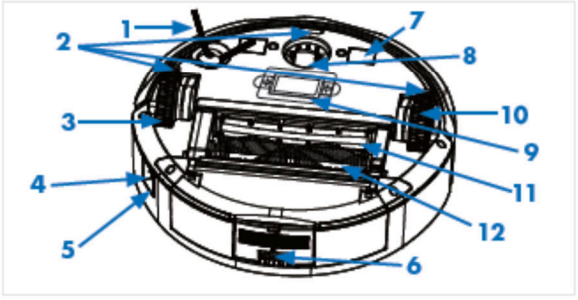
83. On information and belief, Hoover's Quest 1000 robotic vacuum is a floor cleaning robot that comprises a housing, chassis, and wheels with at least one motor, disposed at least partially within the housing, to drive the wheels to move the Accused Products across a floor. The motorized driving of the wheels can be seen, *e.g.*, in the Quest 1000 Overview Video. The housing and chassis are shown in the front and bottom view images below from the robot's user manual:[14]

**Front View**




1. Control Buttons
2. Sensor windows
3. Start button

**Bottom View**

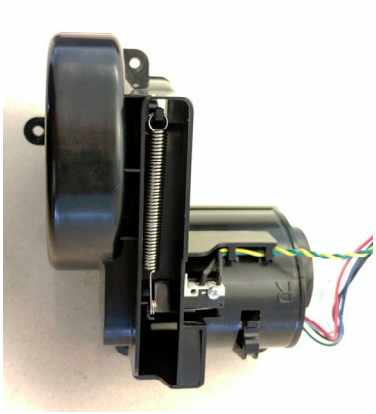


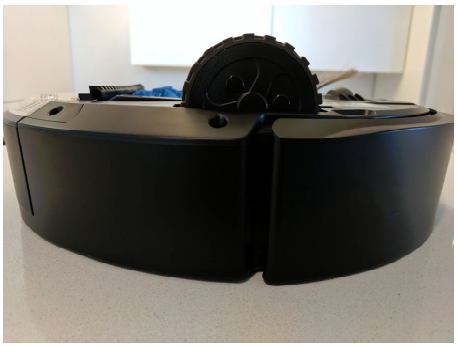

1. Side Brush
2. Ground Detection Sensors
3. Right wheel
4. Power switch
5. Charging port
6. Dirt cup assembly
7. Charging contacts
8. Front wheel
9. Battery Compartment
10. Left wheel
11. Support brush
12. Main brush

84. On information and belief, each of the aforementioned wheels is attached to the chassis via an arm with distal and proximal ends. On information and belief, the wheels are rotatably attached to the distal end of each arm, the proximal end of each arm is pivotably attached to the chassis, and the wheels are biased to an extended position away from the robot by a spring extending between the arm and the robot chassis. On information and belief, during cleaning, the

[14] *See, e.g.*, Quest 1000 Instruction Manual.

weight of the Hoover Quest 1000 overcomes this biasing force from the spring. This wheel arrangement and the biasing action from the spring is visible in the images below:[15]

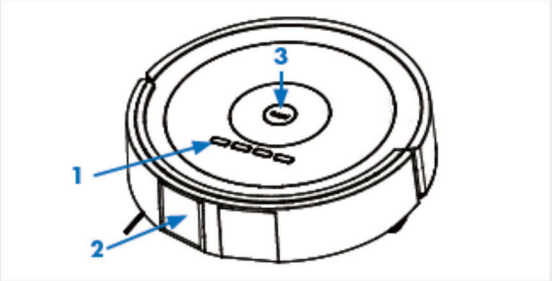




85. On information and belief, the Hoover Quest 1000 also comprises a control module disposed within the housing which directs movement of the robot. On information and belief, it also comprises at least one sensor for detecting an obstacle information and communicating obstacle information to the control module so that the control module can cause the Accused Product to react.[16] Indeed, the Quest 1000 Product Web Page explains that the robot's "QuestNav 3.0™ Technology provides laser mapping, which enables the Quest 1000 to intelligently navigate your home for the most efficient clean." Additionally, for example, sensors are depicted in the Quest 1000 Instruction Manual, labelled as component 2 in each image view below.

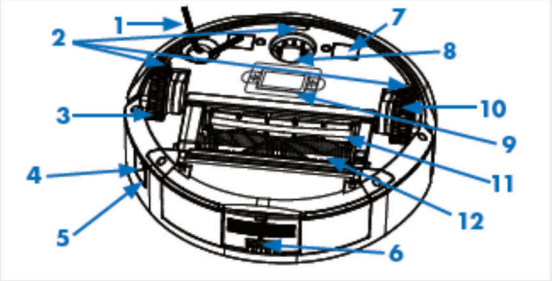
[15] Photographs of Quest 1000 wheel module and Quest 1000 with top resting on surface; *see also* Quest 1000 Clean Sensors Video.
[16] *See, e.g.*, Quest 1000 Overview Video; Quest 1000 Clean Sensors Video.

**Front View**




1. Control Buttons
2. Sensor windows
3. Start button

**Bottom View**




1. Side Brush
2. Ground Detection Sensors
3. Right wheel
4. Power switch
5. Charging port
6. Dirt cup assembly
7. Charging contacts
8. Front wheel
9. Battery Compartment
10. Left wheel
11. Support brush
12. Main brush

86. On information and belief, the Quest 1000 also comprises a removable bin disposed at least partially within the housing and configured to receive particles, and a rotating member configured to direct particulates toward the bin, as shown in the following images from the Quest 1000 Instruction Manual (upper image) and Quest 1000 Product Web Page (lower image):[17]


[17] *See also* Quest 1000 Dirt Cup Video.


87. Upon information and belief, Hoover has induced and continues to induce infringement of at least claim 1 of the '090 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the Quest 1000.

88. Upon information and belief, Hoover's customers and/or end users have directly infringed and are directly infringing claim 1 of the '090 Patent. Hoover has actual knowledge of the '090 Patent at least as of service of this Complaint. Hoover is knowingly inducing its customers and/or end users to directly infringe the '090 Patent through, for example, their use of the Quest 1000, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Hoover's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '090 Patent.[18]

89. Upon information and belief, Hoover has committed the foregoing infringing activities without license from iRobot.

[18] *See, e.g.*, Quest 1000 Product Web Page and linked resources; Quest 1000 Instruction Manual.

90. As a result of Hoover's infringement of the '090 Patent iRobot has suffered and will continue to suffer damage.

91. Hoover's continued infringement of iRobot's patent rights under the '090 Patent will irreparably harm iRobot.

92. The acts of infringement by Hoover will continue unless enjoined by this Court.

**COUNT VIII: INFRINGEMENT OF THE '090 PATENT BY SSSIT**

93. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 92 of this Complaint as though fully set forth herein.

94. Upon information and belief, SSSIT has directly infringed, and continues to directly infringe, the '090 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Hoover, including, for example, the Quest 1000. These Accused Products infringe at least claim 1 of the '090 Patent as explained above in paragraphs 81 – 86 with respect to Hoover's direct infringement, which are incorporated herein by reference.

95. Upon information and belief, SSSIT has committed the foregoing infringing activities without license from iRobot.

96. As a result of SSSIT's infringement of the '090 Patent iRobot has suffered and will continue to suffer damage.

97. SSSIT's continued infringement of iRobot's patent rights under the '090 Patent will irreparably harm iRobot.

98. The acts of infringement by SSSIT will continue unless enjoined by this Court.

**COUNT IX: INFRINGEMENT OF THE '090 PATENT BY REAL POWER**

99. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 98 of this Complaint as though fully set forth herein.

100. Upon information and belief, Real Power contributes to the infringement of at least claim 1 of the ’090 Patent by others, including its customers, distributors, and/or authorized resellers, and/or Hoover’s customers of the Accused Products, in violation of 35 U.S.C. § 271(c). Upon information and belief, acts by Real Power that contribute to the infringement of others include, but are not limited to, the sale, offer for sale, and/or import by Real Power of spare parts used in the Accused Products, such as the Quest 1000. Such spare parts for the Accused Products, on information and belief, are especially made for or adapted for use to infringe, and are not staple articles of commerce and are not suitable for substantial non-infringing use. By way of example, the non-standardized design of robotic vacuum cleaning devices is evidence that Real Power spare parts for the accused Hoover products were especially made or adapted to infringe the ’090 Patent. On information and belief, spare parts for the accused Hoover products are not suitable for use in competing robotic vacuum cleaners because, for example, the former would not properly fit the latter. As such, on information and belief, spare parts for the accused Hoover products cannot be used but with the Accused Products to infringe the ’090 Patent. These Accused Products infringe at least claim 1 of the ’090 Patent as explained above in paragraphs 81—86 with respect to Hoover’s direct infringement, which are incorporated herein by reference.

101. Upon information and belief, Real Power has committed the foregoing infringing activities without license from iRobot.

102. As a result of Real Power’s infringement of the ’090 Patent iRobot has suffered and will continue to suffer damage.

103. Real Power’s continued infringement of iRobot’s patent rights under the ’090 Patent will irreparably harm iRobot.

104. The acts of infringement by Real Power will continue unless enjoined by this Court.

## COUNT X: INFRINGEMENT OF THE '553 PATENT BY HOOVER

105. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 104 of this Complaint as though fully set forth herein.

106. Upon information and belief, Hoover has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '553 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

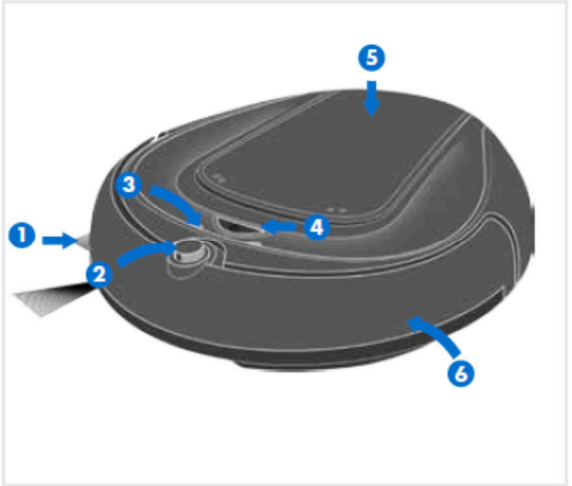
107. For example, on information and belief, Hoover's Quest 800 robotic vacuum, used by Hoover and/or sold and offered for sale by Hoover, including at its website, infringes claim 1 of the '553 Patent; this claim recites:

> An autonomous coverage robot comprising: a drive system configured to maneuver the robot according to a heading setting and a speed setting; a bump sensor responsive to a collision of the robot with an obstacle in a forward direction; and a proximity sensor responsive to a potential obstacle forward of the robot; wherein the drive system is configured to reduce the speed setting in response to a signal from the proximity sensor indicating detection of a potential obstacle, while continuing to advance the robot according to the heading setting; wherein the drive system is configured to increase the speed setting if the drive system does not receive a subsequent signal indicating the presence of an obstacle while continuing to advance according to the heading setting and the reduced speed setting; and wherein the drive system is configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle.

108. On information and belief, Hoover's Quest 800 is an autonomous coverage robot that comprises a drive system configured to maneuver the robot according to a heading setting and a speed setting.[19] On information and belief, Hoover's Quest 800 comprises a bump sensor (responsive to a collision of the robot with an obstacle in a forward direction) and a proximity

[19] *See, e.g.*, Quest 800 Product Web Page, " Hoover Quest 800 Robot Vacuum - BH70800 video" https://hoover.com/products/details/bh70800/hoover-quest-800-robot-vacuum/, redirecting to https://youtu.be/a8W2VZhtK4U?list=PLJT0HzQNNNT9fNR8pzB-S8ZZL6GY1iIta (last visited April 13, 2017). Hereinafter, the "Quest 800 Overview Video."

sensor (responsive to a potential obstacle forward of the robot). For example, the bumper (component 6) is shown in the Quest 800's user guide (top image)[20] and a proximity sensor is seen in a photograph of the Quest 800 with its front shield removed (bottom image).[21]




1. Side brush:
- sweeps dirt to the main brush
- may be pulled off for low pile carpet cleaning
2. IR sensor:
- guides Quest™ back to its docking station as soon as the battery capacity becomes low or it receives the respective command from the remote control or Hoover App
3. LED indicators
* See Trouble Shooting (page 16 )for information on LED functionality
4. "ON/OFF"(⏻) button:
- Press & hold for 2 seconds to start/stop your robot
5. Top panel
- provides access to dirt cup & filter
6. Bumper:
- senses impact and tells the robot to move another direction
- if triggered constantly for 5 seconds or longer the robot will stop automatically

109. On information and belief, the drive system is configured to, *inter alia*, (1) reduce the robot's speed setting in response to an obstacle detection sensor from the proximity sensor while continuing to advance the robot according to the heading setting and (2) increase the robot's speed if the drive system does not receive a subsequent signal indicating the presence of an obstacle while continuing to advance according to the heading setting and the reduced speed setting. On

[20] *See, e.g.*, Quest 800 Instruction Manual, https://hoover.com/file/2174/ (last visited April 13, 2017). Hereinafter, the "Quest 800 Instruction Manual."
[21] Photograph of Quest 800 partially disassembled.

information and belief, the drive system is also configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle.[22] As explained in the user guide, the bumper "senses impact and tells the robot to move another direction."[23]

110. Upon information and belief, Hoover has induced and continues to induce infringement of at least claim 1 of the '553 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the Quest 800.

111. Upon information and belief, Hoover's customers and/or end users have directly infringed and are directly infringing claim 1 of the '553 Patent. Hoover has actual knowledge of the '553 Patent at least as of service of this Complaint. Hoover is knowingly inducing its customers and/or end users to directly infringe the '553 Patent through, for example, their use of the Quest 800, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Hoover's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '553 Patent.[24]

112. Upon information and belief, Hoover has committed the foregoing infringing activities without license from iRobot.

113. As a result of Hoover's infringement of the '553 Patent iRobot has suffered and will continue to suffer damage.

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[22] *See, e.g.*, Quest 800 Overview Video.
[23] Quest 800 Instruction Manual.
[24] *See, e.g.*, Quest 800 Product Web Page, https://hoover.com/products/details/bh70800/hoover-quest-800-robot-vacuum/ (last visited April 13, 2017) and linked resources. Hereinafter, the "Quest 800 Product Web Page."

114. Hoover's continued infringement of iRobot's patent rights under the '553 Patent will irreparably harm iRobot.

115. The acts of infringement by Hoover will continue unless enjoined by this Court.

**COUNT XI: INFRINGEMENT OF THE '553 PATENT BY SSSIT**

116. Upon information and belief, SSSIT has directly infringed, and continues to directly infringe, the '553 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Hoover, including, for example, the Quest 800. These Accused Products infringe at least claim 1 of the '553 Patent as explained above in paragraphs 106 – 109 with respect to Hoover's infringement, which are incorporated herein by reference.

117. As a result of SSSIT's infringement of the '553 Patent iRobot has suffered and will continue to suffer damage.

118. SSSIT's continued infringement of iRobot's patent rights under the '553 Patent will irreparably harm iRobot.

119. The acts of infringement by SSSIT will continue unless enjoined by this Court.

**COUNT XII: INFRINGEMENT OF THE '553 PATENT BY REAL POWER**

120. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 119 of this Complaint as though fully set forth herein.

121. Upon information and belief, Real Power contributes to the infringement of at least claim 1 of the '553 Patent by others, including its customers, distributors, and/or authorized resellers, and/or Hoover's customers of the Accused Products, in violation of 35 U.S.C. § 271(c). Upon information and belief, acts by Real Power that contribute to the infringement of others include, but are not limited to, the sale, offer for sale, and/or import by Real Power of spare parts used in the Accused Products, such as the Quest 800. Such spare parts for the Accused Products, on information and belief, are especially made for or adapted for use to infringe, and are not staple

articles of commerce and are not suitable for substantial non-infringing use. By way of example, the non-standardized design of robotic vacuum cleaning devices is evidence that Real Power spare parts for the accused Hoover products were especially made or adapted to infringe the ’553 Patent. On information and belief, spare parts for the accused Hoover products are not suitable for use in competing robotic vacuum cleaners because, for example, the former would not properly fit the latter. As such, on information and belief, spare parts for the accused Hoover products cannot be used but with the Accused Products to infringe the ’553 Patent. These Accused Products infringe at least claim 1 of the ’553 Patent as explained above in paragraphs 106 – 109 with respect to Hoover’s direct infringement, which are incorporated herein by reference.

122. Upon information and belief, Real Power has committed the foregoing infringing activities without license from iRobot.

123. As a result of Real Power’s infringement of the ’553 Patent iRobot has suffered and will continue to suffer damage.

124. Real Power’s continued infringement of iRobot’s patent rights under the ’553 Patent will irreparably harm iRobot.

125. The acts of infringement by Real Power will continue unless enjoined by this Court.

**COUNT XIII: INFRINGEMENT OF THE ’490 PATENT BY HOOVER**

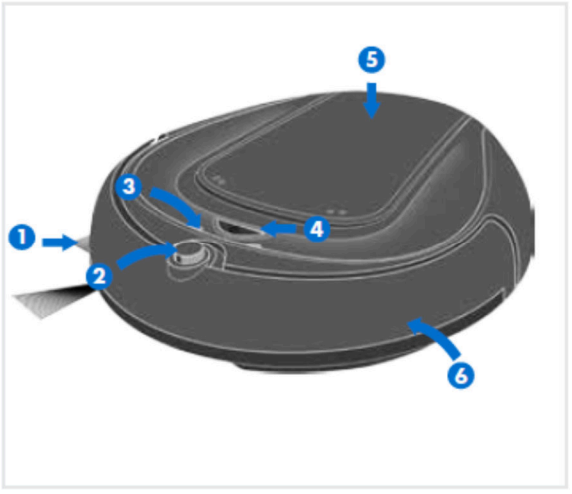
126. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 125 of this Complaint as though fully set forth herein.

127. Upon information and belief, Hoover has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the ’490 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

128. For example, on information and belief, Hoover's Quest 800 robotic vacuum, used by Hoover and/or sold and offered for sale by Hoover at its website, infringes claim 1 of the '490 Patent; this claim recites:

> A mobile robot comprising: (a) means for moving the robot over a surface; (b) an obstacle detection sensor; (c) and a control system operatively connected to said obstacle detection sensor and said means for moving; (d) said control system configured to operate the robot in a plurality of operational modes and to select from among the plurality of modes in real time in response to signals generated by the obstacle detection sensor, said plurality of operational modes comprising: a spot-coverage mode whereby the robot operates in an isolated area, an obstacle following mode whereby said robot travels adjacent to an obstacle, and a bounce mode whereby the robot travels substantially in a direction away from an obstacle after encountering the obstacle, and wherein, when in the obstacle following mode, the robot travels adjacent to an obstacle for a distance at least twice the work width of the robot.

129. On information and belief, the Hoover Quest 800 is a mobile robot that comprises a means for moving the robot over a surface, an obstacle detection sensor, and a control system operatively connected to the obstacle detection sensor and the means for moving.[25] The robot and at least one of the obstacle detection sensors (labelled as component 6) are visible in the image below from the Quest 800 user guide:[26]




1. Side brush:
- sweeps dirt to the main brush
- may be pulled off for low pile carpet cleaning

2. IR sensor:
- guides Quest™ back to its docking station as soon as the battery capacity becomes low or it receives the respective command from the remote control or Hoover App

3. LED indicators
* See Trouble Shooting (page 16 )for information on LED functionality

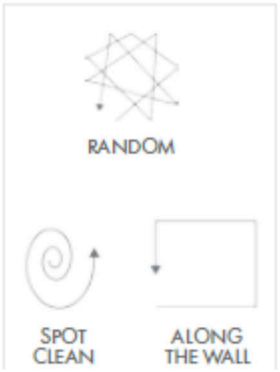
4. "ON/OFF"(⏻) button:
- Press & hold for 2 seconds to start/stop your robot

5. Top panel
- provides access to dirt cup & filter

6. Bumper:
- senses impact and tells the robot to move another direction
- if triggered constantly for 5 seconds or longer the robot will stop automatically

[25] *See, e.g.*, Quest 800 Overview Video.
[26] *See, e.g.*, Quest 800 Instruction Manual.

130. On information and belief, the control system is configured to operate the robot in a plurality of modes, selecting among these modes in real time in response to signals generated by the obstacle sensor. On information and belief, these modes include a spot-coverage mode whereby the robot operates in an isolated area, an obstacle following mode whereby said robot travels adjacent to an obstacle, and a bounce mode whereby the robot travels substantially in a direction away from an obstacle after encountering the obstacle, and wherein, when in the obstacle following mode, the robot travels adjacent to an obstacle for a distance at least twice the work width of the robot. These modes are listed in the Hoover Quest 800 user guide:[27]




As it cleans, it switches between the 3 cleaning modes shown to achieve the best results.

131. Upon information and belief, Hoover has induced and continues to induce infringement of at least claim 1 of the '490 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States the Accused Products, such as the Quest 800.

132. Upon information and belief, Hoover's customers and/or end users have directly infringed and are directly infringing claim 1 of the '490 Patent. Hoover has actual knowledge of

[27] *See, e.g.*, Quest 800 Instruction Manual; *see also* Quest 800 Product Web Page ("QuestNav 2.0™ technology - Built-in Navigation system enables Quest to easily maneuver around and under furniture and use a combination of cleaning patterns to provide the most effective clean. It automatically returns to the docking station to re-charge between cleanings.").

the ’490 Patent at least as of service of this Complaint. Hoover is knowingly inducing its customers and/or end users to directly infringe the ’490 Patent through, for example, their use of the Quest 800, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Hoover’s inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the ’490 Patent.[28]

133. Upon information and belief, Hoover has committed the foregoing infringing activities without license from iRobot.

134. As a result of Hoover’s infringement of the ’490 Patent iRobot has suffered and will continue to suffer damage.

135. Hoover’s continued infringement of iRobot’s patent rights under the ’490 Patent will irreparably harm iRobot.

136. The acts of infringement by Hoover will continue unless enjoined by this Court.

**COUNT XIV: INFRINGEMENT OF THE ’490 PATENT BY SSSIT**

137. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 136 of this Complaint as though fully set forth herein.

138. Upon information and belief, SSSIT has directly infringed, and continues to directly infringe, the ’490 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Hoover, including, for example, the Quest 800. These Accused Products infringe at least claim 1 of the ’490 Patent as explained in paragraphs 127 – 130 above with respect to Hoover’s infringement, which are incorporated herein by reference.

[28] *See, e.g.*, Quest 800 Product Web Page and linked resources.

139. Upon information and belief, SSSIT has committed the foregoing infringing activities without license from iRobot.

140. As a result of SSSIT's infringement of the '490 Patent iRobot has suffered and will continue to suffer damage.

141. SSSIT's continued infringement of iRobot's patent rights under the '490 Patent will irreparably harm iRobot.

142. The acts of infringement by SSSIT will continue unless enjoined by this Court.

**COUNT XV: INFRINGEMENT OF THE '490 PATENT BY REAL POWER**

143. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 142 of this Complaint as though fully set forth herein.

144. Upon information and belief, Real Power contributes to the infringement of at least claim 1 of the '490 Patent by others, including its customers, distributors, and/or authorized resellers, and/or Hoover's customers of the Accused Products, in violation of 35 U.S.C. § 271(c). Upon information and belief, acts by Real Power that contribute to the infringement of others include, but are not limited to, the sale, offer for sale, and/or import by Real Power of spare parts used in the Accused Products, such as the Quest 800. Such spare parts for the Accused Products, on information and belief, are especially made for or adapted for use to infringe, and are not staple articles of commerce and are not suitable for substantial non-infringing use. By way of example, the non-standardized design of robotic vacuum cleaning devices is evidence that Real Power spare parts for the accused Hoover products were especially made or adapted to infringe the '490 Patent. On information and belief, spare parts for the accused Hoover products are not suitable for use in competing robotic vacuum cleaners because, for example, the former would not properly fit the latter. As such, on information and belief, spare parts for the accused Hoover products cannot be used but with the Accused Products to infringe the '490 Patent. These Accused Products infringe

at least claim 1 of the ’490 Patent as explained above in paragraphs 127 – 130 with respect to Hoover’s direct infringement, which are incorporated herein by reference.

145. Upon information and belief, Real Power has committed the foregoing infringing activities without license from iRobot.

146. As a result of Real Power’s infringement of the ’490 Patent iRobot has suffered and will continue to suffer damage.

147. Real Power’s continued infringement of iRobot’s patent rights under the ’490 Patent will irreparably harm iRobot.

148. The acts of infringement by Real Power will continue unless enjoined by this Court.

**COUNT XVI: INFRINGEMENT OF THE ’924 PATENT BY HOOVER**

149. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 148 of this Complaint as though fully set forth herein.

150. Upon information and belief, Hoover has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the ’924 Patent by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, the Accused Products.

151. For example, on information and belief, Hoover’s Quest 800 robotic vacuum, used by Hoover, imported, and/or sold and offered for sale by Hoover, infringes claim 1 of the ’924 Patent; this claim recites:

> A method of cleaning a room, the method comprising: transmitting from a cleaning robot to a mobile phone a status of the cleaning robot; and receiving at the cleaning robot from the mobile phone, in response to an operator command input at the mobile phone and at least in part indicative of a schedule, information including instructions configured to cause a processor of the cleaning robot to execute a cleaning operation in the room according to the schedule, wherein executing the cleaning operation in the room according to the schedule comprises: leaving a

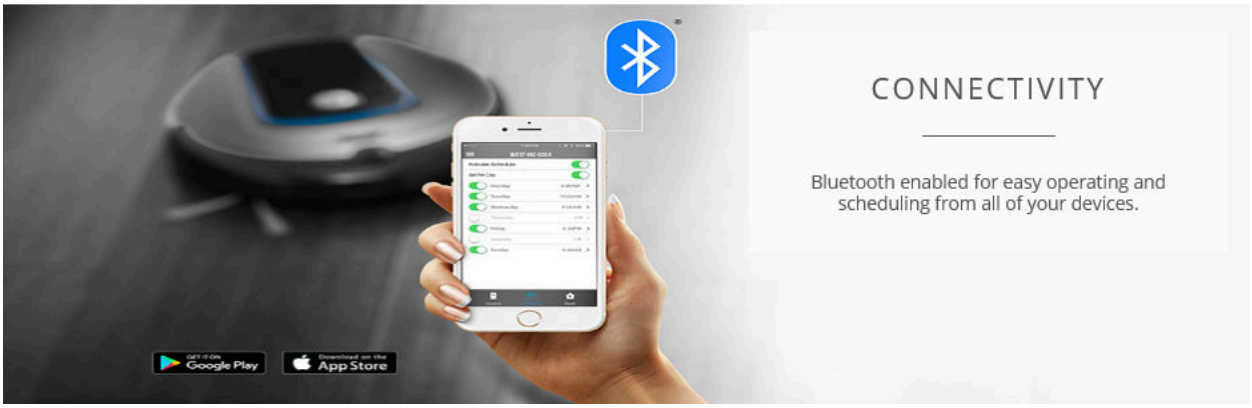
stationary charging device at which the cleaning robot is docked according to the schedule, and navigating about a floor surface of the room.

152. Upon information and belief, the Hoover Quest 800 provides for a method of cleaning a room that includes transmitting from a cleaning robot to a mobile phone a status of the cleaning robot. For example, in the Quest 800 can transmit to a mobile phone or device a status, including, but not limited to, a battery status, a charge status, and/or an error alert such as the image below:[29]


153. Upon information and belief, the Quest 800 can also receive in response to an operator command input at the mobile phone and at least in part indicative of a schedule, information including instructions configured to cause a processor of the cleaning robot to execute a cleaning operation in the room according to the schedule, wherein executing the cleaning operation in the room according to the schedule comprises leaving a stationary charging device at

[29] *See, e.g.*, Hoover App Page, https://itunes.apple.com/us/app/hoover-app/id1146564746?mt=8 (accessed on April 13, 2017), which also state that the user can "[g]et maintenance alerts."

which the cleaning robot is docked according to the schedule, and navigating about a floor surface of the room.[30] Further, for example, the Quest 800 Product Web Page refers to connectivity between a mobile device and the Quest 800 for scheduling the same, and shows the scheduling interface:




154. Upon information and belief, Hoover has induced and continues to induce infringement of at least claim 1 of the '924 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the Quest 800.

155. Upon information and belief, Hoover's customers and/or end users have directly infringed and are directly infringing claim 1 of the '924 Patent. Hoover has actual knowledge of the '924 Patent at least as of service of this Complaint. Hoover is knowingly inducing its customers and/or end users to directly infringe the '924 Patent through, for example, their use of the Quest 800, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Hoover's inducement includes, for example, providing technical

[30] *See, e.g.*, Quest 800 Product Web Page, "Hoover Quest 800 – Schedule with App – BH70800 video" redirected to https://youtu.be/BYq-evyWwBE?list=PLJT0HzQNNNT9fNR8pzB-S8ZZL6GY1iIta (last visited April 13, 2017). Hereinafter, the "Quest 800 App Video."

guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '924 Patent.[31]

156. Upon information and belief, Hoover has committed the foregoing infringing activities without license from iRobot.

157. As a result of Hoover's infringement of the '924 Patent iRobot has suffered and will continue to suffer damage.

158. Hoover's continued infringement of iRobot's patent rights under the '924 Patent will irreparably harm iRobot.

159. The acts of infringement by Hoover will continue unless enjoined by this Court.

**COUNT XVII: INFRINGEMENT OF THE '924 PATENT BY SSSIT**

160. Upon information and belief, SSSIT has directly infringed, and continues to directly infringe, the '924 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Hoover, including, for example, the Quest 800. These Accused Products infringe at least claim 1 of the '924 Patent as explained above in paragraphs 150 – 153 with respect to Hoover's infringement, which are incorporated herein by reference.

161. As a result of SSSIT's infringement of the '924 Patent iRobot has suffered and will continue to suffer damage.

162. SSSIT's continued infringement of iRobot's patent rights under the '924 Patent will irreparably harm iRobot.

163. The acts of infringement by SSSIT will continue unless enjoined by this Court.

[31] *See, e.g.*, Quest 800 Product Web Page and linked resources, including the Quest 800 App Video.

## COUNT XVIII: INFRINGEMENT OF THE ’924 PATENT BY REAL POWER

164. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 163 of this Complaint as though fully set forth herein.

165. Upon information and belief, Real Power contributes to the infringement of at least claim 1 of the ’924 Patent by others, including its customers, distributors, and/or authorized resellers, and/or Hoover’s customers of the Accused Products, in violation of 35 U.S.C. § 271(c). Upon information and belief, acts by Real Power that contribute to the infringement of others include, but are not limited to, the sale, offer for sale, and/or import by Real Power of spare parts used in the Accused Products, such as the Quest 800. Such spare parts for the Accused Products, on information and belief, are especially made for or adapted for use to infringe, and are not staple articles of commerce and are not suitable for substantial non-infringing use. By way of example, the non-standardized design of robotic vacuum cleaning devices is evidence that Real Power spare parts for the accused Hoover products were especially made or adapted to infringe the ’924 Patent. On information and belief, spare parts for the accused Hoover products are not suitable for use in competing robotic vacuum cleaners because, for example, the former would not properly fit the latter. As such, on information and belief, spare parts for the accused Hoover products cannot be used but with the Accused Products to infringe the ’924 Patent. These Accused Products infringe at least claim 1 of the ’924 Patent as explained above in paragraphs 150 – 153 with respect to Hoover’s direct infringement, which are incorporated herein by reference.

166. Upon information and belief, Real Power has committed the foregoing infringing activities without license from iRobot.

167. As a result of Real Power’s infringement of the ’924 Patent iRobot has suffered and will continue to suffer damage.

168. Real Power's continued infringement of iRobot's patent rights under the '924 Patent will irreparably harm iRobot.

169. The acts of infringement by Real Power will continue unless enjoined by this Court.

## PRAYER FOR RELIEF

WHEREFORE, iRobot prays for judgment in its favor against Defendants, and granting relief as follows:

A. For a judgment declaring that the Defendants have infringed the Asserted Patents;

B. For a grant of an injunction pursuant to 35 U.S.C. § 283, enjoining the Defendants together with their respective officers, directors, agents, servants, employees, and attorneys, and upon those persons in active concert or participation with them from further acts of infringement;

C. For an award to iRobot of compensatory damages as a result of the Defendants' infringement of the Asserted Patents, together with interest and costs, and in no event less than a reasonable royalty;

D. For a judgment declaring that this case is exceptional and awarding iRobot its expenses, costs, and attorneys' fees in accordance with 35 U.S.C. § 285 and Rule 54(d) of the Federal Rules of Civil Procedure;

E. For such other and further relief as the Court deems just and proper.

## DEMAND FOR A JURY TRIAL

iRobot hereby demands a trial by jury in this action.

Respectfully submitted,

By: *_/s/ Stephen Marshall_*

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